



**GWANDA STATE UNIVERSITY**  
**FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE**  
**CROP SCIENCE DEPARTMENT**  
**BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE**  
**Biology and Management of Plant Pathogens**  
**LCS 4202**

**Second Semester Final Examination Paper**

**June 2023**

This examination paper consists of 2 pages.

**Time Allowed:** THREE (3) Hours  
**Total Marks:** 100  
**Special Requirements:** None  
**Examiner's Name:** R. Mapuranga

**INSTRUCTIONS**

1. Answer any **five (5)** questions
2. Start each question on a new page

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
<b>EACH QUESTION</b>	<b>20</b>
<b>TOTAL ATTAINABLE MARKS</b>	<b>100</b>

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1. (a) Define a plant disease [2]  
(b) Explain the four characteristics that are used in the identification of plant pathogenic fungi [8]  
(c) Describe any five factors that affect the rate and extent of spread of pathogens by air-borne vectors [10]
  2. (a) Identify Koch's postulates that are used in disease diagnosis [5]  
(b) With the aid of diagrams, describe the two types of disease progress curves that are used in plant pathology [15]
  3. (a) Set out the six (6) stages of disease development [12]  
(b) Describe any four (4) physical factors that affect spore germination [8]
  4. (a) List and explain any five (5) ways which smallholder farmers can use to control bacterial diseases [5]  
(b) Describe the five (5) physiological processes in plants that are negatively affected by plant pathogens [15]
  5. (a) Identify the main effects of plant diseases on humans [5]  
(b) Describe using examples, three (3) non-vector methods of virus transmission [15]
  6. (a) Define the term integrated disease management [2]  
(b) Outline the legislative instruments that are used in disease control strategies in Zimbabwe [18]
  7. (a) Define a plant pathogen [2]  
(b) Bacterial blights are a common disease in tobacco growing areas. Discuss the diseases under the following headings:
    - i. Causal organism(s) [2]
    - ii. Symptoms [5]
    - iii. Disease cycle [5]
    - iv. Control [6]
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End of Examination Paper

